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## NOTICE OF ALLOWANCE AND FEE(S) DUE

30662 7590 11/30/2009

SCHACHT LAW OFFICE, INC.  
SUITE 202  
2801 MERIDIAN STREET  
BELLINGHAM, WA 98225-2412

EXAMINER

TRUONG, THANH K

ART UNIT

PAPER NUMBER

3721

DATE MAILED: 11/30/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/667,176

09/17/2003

John L. White

P214414

8586

TITLE OF INVENTION: PRELOADED DROP HAMMER FOR DRIVING PILES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$0	\$0	\$755	03/01/2010

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
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or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

30662 7590 11/30/2009

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/667,176 09/17/2003 John L. White P214414 8586

TITLE OF INVENTION: PRELOADED DROP HAMMER FOR DRIVING PILES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional YES \$755 \$0 \$0 \$755 03/01/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
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TRUONG, THANH K 3721 173-001000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

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Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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EXAMINER

TRUONG, THANH K

ART UNIT

PAPER NUMBER

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## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 24 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 24 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/667,176	WHITE, JOHN L.	
	<b>Examiner</b>	<b>Art Unit</b>	
	THANH K. TRUONG	3721	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed November 9, 2009.
2. ☒ The allowed claim(s) is/are 1,4,6,8,9,12,13,18 and 21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date ____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date ____.</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other ____.</li> </ol> |
|--|--|

/Thanh K Truong/  
Primary Examiner  
Art Unit 3721

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Michael R. Schacht on November 20, 2009.

2. The application has been amended as follows:

**Claim 1.** A drop hammer for driving a pile comprising:

- a housing member defining a housing chamber and a vent port arranged between the lower and upper positions, where the vent port defines a preload position, and allows ambient air to flow into and out of the housing chamber under predetermined conditions;
- a rigid ram member supported within the housing chamber for movement relative to the housing member between an upper position and a lower position;
- a rigid helmet member supported by the housing member for movement relative to the housing member between a rest position and an impact position;
- a first seal arranged to seal a gap between the ram member and the housing member;
- a second seal arranged to seal a gap between the helmet member and the housing member; and
- a lifting assembly at least partly disposed within the housing chamber above the ram member; whereby the ram member moves from the lower position to the upper position and back to the lower position to define an operating cycle;

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the lifting assembly engages and lifts the ram member from the lower position to the upper position once during each operating cycle;  
when the lifting system raises the ram member above the preload position, ambient air flows into the housing chamber;  
the ram member free falls as the ram member moves from the upper position to the preload position;  
when the ram member falls below the preload position, the first and second seals define a preload chamber, where the first and second seals seal the preload chamber such that ambient air within the preload chamber portion of the housing chamber compresses to apply a preload force on the inner portion of the helmet member, and oppose movement of the ram member towards the lower position when the ram member is below the preload position; and  
when the ram member moves into the lower position, the ram member directly and rigidly impacts the helmet member to force the helmet member from the rest position to the impact position, thereby driving the pile.

**Claims 2-3 (previously cancelled)**

**Claim 4.** A drop hammer as recited in claim 1, in which the first seal prevents ambient air from flowing through the vent port when the ram member is below the preload position.

**Claim 5 (previously cancelled)**

**Claim 6.** A drop hammer as recited in claim 1, in which:  
the ram member defines a ram side wall;  
the housing member defines a housing interior wall;  
the first seal inhibits fluid flow between the ram side wall and the housing interior wall.

**Claim 7 (previously cancelled)**

**Claim 8.** A drop hammer as recited in claim 1, in which:

the impact of the ram member is transmitted to the pile through the helmet member;  
the helmet member extends through a helmet opening formed in the housing member; and  
the second seal inhibits fluid flow between the helmet member and the housing member through the helmet opening.

**Claim 9.** A drop hammer as recited in claim 8, in which:

the ram member defines a ram side wall;  
the housing member defines a housing interior wall;  
the first seal inhibits fluid flow between the ram side wall and the housing interior wall.

**Claims 10-11 (previously cancelled)**

**Claim 12.** A drop hammer as recited in claim 1, further comprising a clamp assembly for securing the helmet member to the pile.

**Claim 13.** A method of driving a pile comprising:

providing a housing member defining a housing chamber;  
forming a vent port between the lower and upper positions, where the vent port defines a preload position, and  
allows ambient air to flow into and out of the housing chamber under predetermined conditions;  
supporting a rigid helmet member from the housing member for movement relative to the housing member between a rest position and an impact position;

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supporting a rigid ram member within the housing chamber for movement relative to the housing member between an upper position and a lower position;  
forming a first seal between the ram member and the housing member;  
forming a second seal between the helmet member and the housing member;  
connecting the helmet member to the pile;  
arranging at least a portion of a lifting assembly above the ram member within the housing chamber;  
operating the lifting assembly to engage the ram member and raise the ram member from the lower position into the upper position to define a first portion of an operating cycle;  
disengaging the lifting assembly from the ram member to allow the ram member to fall from the upper position to the lower position to define a second portion of the operating cycle;  
causing the ram member directly and rigidly to impact the helmet member during the second portion of the operating cycle such that the ram member forces the helmet member from the rest position to the impact position, thereby driving the pile;  
while the ram member is above a preload position, allowing ambient air to flow out of a preload chamber portion of the housing chamber defined by the housing member such that the ram member free falls as the ram member moves from the upper position to the preload position; and  
while the ram member is below the preload position, the first and second seals seal a preload chamber portion of the housing chamber, thereby substantially preventing ambient air from flowing out of the preload chamber portion of the housing chamber, where ambient air within the preload chamber portion of the housing chamber compresses as the ram member moves from the preload position to the lower position to apply a preload force on the helmet member prior to impact of the ram member on the helmet member, and



oppose movement of the ram member towards the lower position when the ram member is below the preload position.

**Claims 14-17 (previously cancelled)**

**Claim 18.** A drop hammer for driving a pile comprising:

- a housing member defining a housing chamber and a vent port between the lower and upper positions;
- a rigid ram member supported within the housing chamber for movement relative to the housing member between an upper position and a lower position; and
- a rigid helmet member supported by the housing member for movement relative to the housing member between a rest position and an impact position;
- a first seal arranged to seal a gap between the ram member and the housing member;
- a second seal arranged to seal a gap between the helmet member and the housing member; and
- a lifting assembly at least partly disposed within the housing chamber above the ram member; whereby

the ram member moves from the lower position to the upper position and back to the lower position to define an operating cycle;

the lifting assembly engages and lifts the ram member from the lower position to the upper position once during each operating cycle;

as the ram member falls from the upper position to a preload position defined by the vent port, ambient air exits the housing chamber through the vent port;

the ram member free falls as the ram member moves from the upper position to the preload position;

when the ram member falls below the preload position, the first and second seals seal a preload chamber portion of the housing chamber such that ambient

air within the preload chamber portion of the housing chamber below the vent port compresses as the ram member moves into the lower position to apply a preload force on the helmet member, and oppose movement of the ram member towards the lower position when the ram member is below the preload position; and when the ram member moves into the lower position, the ram member directly and rigidly impacts the helmet member to drive the pile.

**Claims 19-20 (previously cancelled)**

**Claim 21.** A drop hammer as recited in claim 18, further comprising a clamp assembly for securing the helmet member to the pile.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to THANH K. TRUONG whose telephone number is (571)272-4472. The examiner can normally be reached on Mon-Fri 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi Rada can be reached on 571-272-4467. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

tkr  
November 21, 2009.

/Thanh K Truong/  
Primary Examiner, Art Unit 3721.